1905MNRAS..66...10.

Observations of the Satellite of Neptune from Photographs taken at the Royal Observatory, Greenwich, between 1904 *November* 11 *and* 1905 *April* 15.

(*Communicated by the Astronomer Royal.*)

The following measures of position-angle and distance of *Neptune's* satellite were made from photographs taken with the 26-inch refractor of the Thompson Equatorial. The occulting shutter was used, as in previous years. The photographs were taken by Messrs. Davidson, Edney, or Melotte, and were measured in a position micrometer in direct and reversed positions by Messrs. Edney and Burkett. The tabular positions with which comparison is made were computed from the data given in the *Connaissance des Temps*, based on Dr. Hermann Struve's elements, the eccentricity of the orbit being neglected.

A discussion of these residuals gives the following differences in the sense Tabular–Observed to Dr. Hermann Struve's elements.

$$du = -0^\circ{\cdot}72. \quad dN = -0^\circ{\cdot}89. \quad dI = -0^\circ{\cdot}27. \quad da = +''{\cdot}086\,;$$

giving for the epoch 1905·1

$$a = 16''{\cdot}185. \quad N = 188^\circ{\cdot}26. \quad I = 117^\circ{\cdot}14.$$

NEPTUNE AND SATELLITE.

Position-angle and Distance from Photographs taken with the 26-inch Refractor.

Date and G.M.T.					Position-angle.			Distance.		
					Observed.	Tabular.	T—O.	Observed.	Tabular.	T—O.
1904.	d	h	m	s	°	°	°	″	″	″
Nov.	11	12	1	38	315·77	317·91	+2·14	12·47	12·82	+0·35
	11	12	37	34	315·66	316·23	+0·57	12·76	12·97	+ ·21
	14	12	52	18	131·53	131·60	+0·07	13·20	13·43	+ ·23
	14	13	25	32	128·86	130·18	+1·32	13·56	13·57	+ ·01
	15	12	3	45	84·89	86·80	+1·91	16·20	16·68	+ ·48
	22	11	45	23	20·87	23·73	+2·86	11·28	11·49	+ ·21
	22	12	19	12	22·97	21·71	−1·26	11·46	11·41	− ·05*
	22	13	3	38	19·37	19·00	−0·37	11·70	11·31	− ·39
	22	13	33	54	15·77	17·13	+1·36	11·57	11·24	− ·33
Dec.	5	12	14	20	288·13	289·97	+1·84	15·39	15·77	+ ·38
	5	12	42	16	288·00	289·09	+1·09	15·48	15·85	+ ·37
	5	13	7	49	288·02	288·28	+0·26	15·78	15·93	+ ·15
	7	11	7	55	178·29	178·25	−0·04	10·80	11·06	+ ·26
	20	10	33	31	98·63	99·49	+0·86	16·56	16·62	+ ·06

* Neptune on edge of occulting shutter.

1905MNRAS..66...10.

Date and G.M.T.					Position-angle.			Distance.		
					Observed.	Tabular.	T−O.	Observed.	Tabular.	T−O.
1905.	d	h	m	s	°	°	°	″	″	″
Jan.	9	9	52	4	307·67	308·77	+1·10	13·45	13·64	+ ·19
	9	10	24	28	307·20	307·40	+0·20	13·53	13·78	+ ·25
	10	9	19	11	263·01	263·91	+0·90	16·86	16·79	− ·07
	10	9	49	47	262·79	263·05	+0·26	16·57	16·76	+ ·19
	17	10	14	18	194·26	195·24	+0·98	11·41	11·29	− ·12
	17	10	47	8	191·11	193·19	+2·08	11·03	11·23	+ ·20
	25	10	10	50	68·94	69·07	+0·13	15·67	15·67	·00
	25	10	40	1	67·77	68·13	+0·36	15·62	15·57	− ·05
	25	11	6	48	66·98	67·25	+0·27	15·50	15·48	− ·02
Feb.	2	10	18	9	282·74	282·77	+0·03	15·97	16·17	+ ·20
	2	10	55	15	281·21	281·66	+0·45	16·11	16·26	+ ·15
	6	10	32	56	54·26	55·80	+1·54	13·83	14·21	+ ·38
	6	11	9	11	53·42	54·37	+0·95	13·64	14·05	+ ·41
	16	8	39	58	146·60	146·55	−0·05	11·62	11·91	+ ·29
	17	11	21	31	86·69	88·25	+1·56	17·08	16·69	− ·39
	17	11	46	39	85·91	87·55	+1·64	16·98	16·69	− ·29
Mar.	2	8	50	23	28·90	27·50	−1·40	11·35	11·66	+ ·31*
	2	9	28	6	27·02	25·36	−1·66	11·26	11·54	+ ·28*
	2	10	1	57	24·15	23·40	−0·75	11·59	11·44	− ·15
	3	9	8	11	301·94	304·28	+2·34	13·89	13·69	− ·20
	3	9	35	53	303·06	303·16	+0·10	13·25	13·81	+ ·56
	3	10	12	7	301·64	301·72	+0·08	13·90	13·96	+ ·06
	9	9	19	26	295·76	296·18	+0·42	14·18	14·51	+ ·33
	17	7	19	11	183·23	186·22	+2·99	10·50	10·80	+ ·30
	17	7	51	42	183·71	184·12	+0·41	10·60	10·77	+ ·17
	21	7	31	1	287·84	288·64	+0·80	14·99	15·21	+ ·22
	21	8	2	56	286·32	287·62	+1·30	15·38	15·31	− ·07
	21	8	27	51	285·32	286·82	+1·50	14·76	15·38	+ ·62
	21	8	58	46	285·38	285·85	+0·47	14·94	15·48	+ ·54
	22	7	47	15	245·67	245·82	+0·15	14·96	15·01	+ ·05
	22	8	12	22	243·60	244·98	+1·38	14·72	14·92	+ ·20
	22	8	55	5	242·85	243·53	+0·68	14·71	14·77	+ ·06
	22	9	18	30	242·85	242·73	−0·12	14·78	14·68	− ·10
	23	7	30	56	173·00	173·99	+0·99	11·00	10·73	− ·27
	23	8	4	31	170·89	171·81	+0·92	10·72	10·75	+ ·03
	24	7	48	7	104·60	105·30	+0·70	15·32	15·50	+ ·18
	24	8	26	36	103·21	104·12	+0·91	15·57	15·61	+ ·04

* Neptune on edge of occulting shutter.

1905MNRAS..66...10.

Date and G.M.T.					Position-angle.			Distance.		
					Observed.	Tabular.	T−O.	Observed.	Tabular.	T−O.
1905.	d	h	m	s	°	°	°	″	″	″
Mar.	27	7	48	11	281·98	282·60	+0·62	15·78	15·71	− ·07
	27	8	21	49	280·98	281·60	+0·62	15·91	15·79	− ·12
Apr.	6	8	11	8	47·09	48·30	+1·21	13·10	13·04	− ·06
	12	9	16	18	36·43	36·96	+0·53	12·00	12·01	+ ·01
	12	9	41	23	35·72	35·68	−0·04	11·95	11·92	− ·03
	15	9	20	56	212·30	212·11	−0·19	11·19	11·65	+ ·46

Observations of Jupiter's Sixth and Seventh Satellites from Photographs taken with the 30-inch Reflector of the Thompson Equatorial at the Royal Observatory, Greenwich.

(*Communicated by the Astronomer Royal.*)

The photographs were taken by Mr. Melotte, Mr. Davidson, or Mr. Edney. The measures of distance and position-angle from *Jupiter* are to be considered as merely provisional pending more complete measurements by the help of reference stars. The over-exposed image of *Jupiter* gave a reversed image in its centre suitable for measurement.

For more accurate measurement it is proposed to find the positions of the satellite in each case relatively to three or four faint comparison stars round it—the positions of these comparison stars relatively to 9 mag. reference stars being obtained from photographs with the Astrographic telescope, where the field sensibly free from distortion is much larger. The position of *Jupiter* will be determined from similar photographs with shorter exposures, the same stars being used as reference stars.

The provisional measures given below are not corrected for refraction and aberration. A comparison is given with Mr. F. E. Ross's Ephemerides, *A.N.* 4042 and L.O.B. No. 82.

Observations of Jupiter and Satellite VI.

Plate No.	Date.		G.M.T.		*p.*		*s.*		Tab.—Obs. *p.*	Tab.—Obs. *s.*	Exposure.
	1905.		h	m	°	′	′	″	°	′	m
2028	Aug.	23	13	30	311	9	25	30	...	...	30
2029		23	14	23	310	45	25	33	...	...	31
2038	Sept.	3	15	17	290	51	36	59	+4·8	− 0·5	40
2047		7	13	26	286	54	40	52	3·9	1·0	60
2048		7	15	32	286	48	40	54	4·0	1·0	55
2050		8	12	56	285	54	41	43	3·7	0·9	30
2054		12	14	37	281	29	45	16	4·0	1·5	20
2055		12	15	5	281	26	45	17	+4·0	−1·5	20